

**REMARKS**

The non-final Office Action dated June 8, 2009, has been carefully reviewed and the following remarks are responsive thereto. Claims 1, 6 and 9, and Figure 3 have been amended. New claim 10 which depends on claim 1 is added.

No new matter has been added.

Claims 1-10 remain pending upon entry of the present amendment. Reconsideration and allowance are respectfully requested.

***Drawings***

The Office Action objected to Figure 3. As shown by the present amendment, the terms "abstracting" in Figure 3 have been replaced with "extracting". No new matter has been added. Accordingly, the applicants respectfully request this objection be withdrawn.

***Claim Objections***

Claims 6-9 are objected to because of informalities. By the present amendment, claims 6 and 9 have been amended. The detailed amendments in the claims are as follows:

- Replace "abstraction" in line 4 of claim 6 with "extraction";
- Insert "the" before "CPU" in line 8 of claim 9.

No new matter has been added.

Accordingly, the applicants respectfully request this objection be withdrawn.

***Claim Rejections - 35 USC§101***

Claims 1-5 are objected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 1 has been amended. By the present amendment, the

method claims are tied to a particular apparatus, thus the applicants respectfully request this objection be withdrawn.

Additionally, new claim 10, which depends on claim 1, is added to further define the device for realizing dynamic adjustment of data bandwidth in transmission equipment. From paragraphs [0008] and [0024] of the specification and the original claim 6, it can be seen that no new matter is added.

### ***Claim Rejections - 35 USC§102***

Claims 1-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Feinberg et al. (2004/0001579). The Applicants respectfully disagree for the following reasons.

To anticipate a claim, a single reference must disclose each element of that claim. For a proper rejection of a claim under 35 U.S.C. §102, the cited reference must disclose, teach, or suggest all elements/features of the claim at issue. See, e.g., *E.I. du Pont de Nemours & Co. v. Phillips Petroleum Co.*, 849 F.2d 1430, 7 U.S.P.Q.2d 1129 (Fed. Cir. 1988).

#### **Claim 1:**

Claim 1 provides a method for realizing dynamic adjustment of data bandwidth in transmission equipment, comprising adding, by a device for realizing dynamic adjustment of data bandwidth in transmission equipment, a control channel in a trunk link of the transmission equipment for describing occupancy on time slots by a current service.

With reference to Feinberg, it discloses a method for operating an integrated communications system providing voice and data communications to a plurality of users and simulating a key system, wherein a plurality of telephone lines (subscriber lines) are trunked to the integrated communications system providing voice and data communications (Abstract and Figure 2), which actually means to add an access switch in the user side.

It can be seen that the claimed invention of independent claim 1 differs substantially from Feinberg, and at least the following elements provided by claim 1 of the present invention are not found in Feinberg:

a) The element of "a method for realizing dynamic adjustment of data bandwidth in transmission equipment" is not found in Feinberg.

Feinberg pertains to a method for operating an integrated communications system providing voice and data communications to a plurality of users and simulating a key system (Abstract). From the abstract and figure 2 of Feinberg, it can be seen that the method disclosed by Feinberg is to trunk a plurality of telephone lines (subscriber lines) to the integrated communications system providing voice and data communication, which actually means to add an access switch in the user side. That is to say, the method disclosed by Feinberg is applied in the user side, which of course will affect the users' application. In contrast, the applicants' claimed invention of independent claim 1 relates to a method for realizing dynamic adjustment of data bandwidth in transmission equipment, which is applied in the transmission equipment. The method provided by claim 1 of the present invention is to add a function of dynamically adjusting data bandwidth for the trunk link of the transmission equipment, such that there is not any change in the user side, and the user will not feel that there is any change in applications. Feinberg, however, makes no reference to such a method.

In response to the Office Action assertion that Feinberg discloses a method for realizing dynamic adjustment of data bandwidth in transmission equipment in paragraph 0019, the applicants respectfully submit that the cited portion of Feinberg makes no reference to such a method. As can be seen in paragraph 0019 of Feinberg, an object of Feinberg is to provide systems and methods allowing a broad set of services and functions to co-exist in the same system, but not to provide a method for realizing dynamic adjustment of data bandwidth in transmission equipment. Although paragraph 0019 of Feinberg recites "leveraging shared

resources while providing a high level interface and intelligence that allows for the shared resources to be dynamically allocated and re-allocated", it does not disclose to realize dynamic adjustment of data bandwidth in transmission equipment. Actually, as can be clearly seen from figure 2 of Feinberg that the method disclosed by Feinberg is to add an access switch and is applied in the user side.

b) The element "adding by a device for realizing dynamic adjustment of data bandwidth in transmission equipment a control channel in a trunk link of the transmission equipment for describing occupancy on time slots by a current service" provided by claim 1 of the present invention is not found in Feinberg.

The applicants respectfully submit that the cited portions (paragraphs 0279, 0289, 0290, 0424 and paragraph 0095) of Feinberg make no reference to such element. Although "a D or similar control signaling channel" is recited by Feinberg, the D channel is not equivalent to the added "control channel in a trunk link of the transmission equipment" recited in claim 1 of the present invention. The D channel is a standard ISDN channel, of which the definition has already been specified in the related Specification on ISDN, and which is not to be added by a device for realizing dynamic adjustment of data bandwidth in transmission equipment. The control channel in a trunk link of the transmission equipment provided by claim 1 of the present invention, however, is added by a device for realizing dynamic adjustment of data bandwidth in transmission equipment, and is not a standard ISDN channel which has been specified in the related Specification on ISDN.

Additionally, the D channel disclosed by Feinberg is used to provide appropriate signaling information for the voice or B channels (lines 6-8 of paragraph 0289). As can be seen in the last sentence in paragraph 0289, "The control signaling over such a D-type channel is sometimes referred to as NFAS, or Network Facility Associated Signaling." Thus it can be known that what the D channel provided is signaling-type information, such as NFAS, or

Network Facility Associated Signaling. In other words, the D channel disclosed by Feinberg is used for carrying signaling-type information, but not used for describing occupancy on time slots by a current service.

Further, referring to paragraph 0095 of Feinberg, the cited portion of Feinberg also does not involve any concept of "adding a control channel in a trunk link of the transmission equipment for describing occupancy on time slots by a current service". As can be seen in lines 3-9 of paragraph 0095 of Feinberg, it is the LCR, BQOS and B/W rules 21, but not the added control channel in a trunk link of the transmission equipment, that provides tables, information, rules and/or algorithms by which data and voice communications may be allocated and/or controlled. And the information provided by the LCR, BQOS and B/W rules 21 includes the current cost of utilizing various resources (based on time of day, amount of usage, integrated amount of usage over some period of time), and **also priority rules** for various types of communications. It can be seen that the information provided by the LCR, BQOS and B/W rules 21 is not the occupancy on time slots by the current service. Actually, the cited portions of Feinberg do not give any information about "time slot".

Since the control channel in claim 1 of the present invention uses different means to realize different functions and achieve different technical effects, the control channel in claim 1 of the present invention is different from that in Feinberg.

For at least the above reasons, Feinberg does not disclose or suggest each and every element of claim 1 of the present invention, and therefore claim 1 should be allowed over the cited reference. The applicants respectfully submit claim 1 conforms to the provisions of 35 U.S.C. 102(e).

Moreover, the technical scheme defined by claim 1 of the present invention not only possesses novelty relative to Feinberg, but also possesses inventiveness relative to Feinberg.

**Claims 2-5 and 10:**

Dependent claims 2-5 and the new claim 10 depend on independent claim 1 directly or indirectly, and are thus allowable for at least the same reasons as claim 1.

**Claim 6:**

Claim 6 provides a device for realizing dynamic adjustment of data bandwidth in transmission equipment, comprising: a control word process circuit, a time slot distribution circuit and a CPU interface circuit, wherein the control word process circuit is designed to complete extraction and insertion of control information in control channel of E1/T1 link; the time slot distribution circuit is designed to complete separating voice time slots from Ethernet data time slots, and rebuilding data; the CPU interface circuit implements controlling on time slot distribution.

It can be seen that the claimed invention of independent claim 6 differs substantially from Feinberg, and at least the following elements provided by claim 6 of the present invention are not found in Feinberg:

a) The element of "a device for realizing dynamic adjustment of data bandwidth in transmission equipment" is not found in Feinberg.

With reference to Feinberg, what it discloses is a communication system 50 providing an integrated system for controlling and managing communication such as in an office (paragraph 0070 and figure 2 of Feinberg), which actually acts like an access switch in the user side. In contrast, the device for realizing dynamic adjustment of data bandwidth in transmission equipment provided by claim 6 of the present invention is **not** applied in the user side, but in the transmission equipment. Thus in claim 6 of the present invention, there is not any change in the user side, and the user will not feel that there is any change in applications. Feinberg, however, makes no reference to such a device.

Although paragraph 0019 of Feinberg recites "leveraging shared resources while providing a high level interface and intelligence that allows for the shared resources to be

dynamically allocated and re-allocated", it does **not** disclose to realize dynamic adjustment of data bandwidth in transmission equipment. Actually, as can be clearly seen from figure 2 of Feinberg that the communication system 50 disclosed by Feinberg acts like a switch and is applied in the user side, which of course will affect the users' application.

b) The elements of "a control word process circuit" and "the control word process circuit is designed to complete extraction and insertion of control information in control channel of E1/T1 link" are not found in Feinberg.

The device for realizing dynamic adjustment of data bandwidth in transmission equipment provided by claim 6 of the present invention comprises "a control word process circuit", and "the control word process circuit is designed to complete extraction and insertion of control information in control channel of E1/T1 link". The cited portions (paragraphs 0019, 0081, 0279, 0289, 0290, 0424 and figures 3, 3A, 4) of Feinberg, however, make no reference to such a control word process circuit.

Firstly, Feinberg does **not** disclose any control channel of E1/T1 link. As mentioned above, the D channel disclosed by Feinberg is **not** equivalent to the control channel of E1/T1 link provided by the present invention. Furthermore, the system disclosed by Feinberg neither involves any concept of extracting and inserting of the control signaling information in the D channel, nor discloses any hardware designed to complete extraction and insertion of control information in control channel of E1/T1 link. Thus it is **impossible** for Feinberg to disclose a control word process circuit which is designed to complete extraction and insertion of the control signaling information in control channel of E1/T1 link.

c) The elements of "a time slot distribution circuit" and "the time slot distribution circuit is designed to complete separating voice time slots from Ethernet data time slots, and rebuilding data" are not found in Feinberg.

The device for realizing dynamic adjustment of data bandwidth in transmission

equipment provided by claim 6 of the present invention comprises "a time slot distribution circuit", and "the time slot distribution circuit is designed to complete separating voice time slots from Ethernet data time slots, and rebuilding data". The cited portions (paragraphs 0019, 0081, 0279, 0289, 0290, 0424 and figures 3, 3A, 4) of Feinberg, however, make no reference to such a time slot distribution circuit.

Although in paragraph 0424 of Feinberg, there is a recitation of "DNI module 700 provides an improvement to an existing T-1 interface module, which preferably allows a variable number of data channels from T-1 connection 740 to be split off and sent to external router (or equipment) 710 preferably via V.35 serial cable 742", it can be seen that it is the **data channels** (but **not data time slots**) being **split off** (but **not separated** from voice **time slots**) and sent to external router. Additionally, from figure 2 of Feinberg, it can be clearly seen that there are Digital Trunk and POTS Trunk in Feinberg, which means that the data service and the voice service occupy dedicated telephone lines respectively, and the telephone lines occupied by the data service can not be distributed to the voice service. Furthermore, Feinberg does not give any information about "time slot" or "time slot distribution". Actually in Feinberg, since the data service and the voice service occupy dedicated **telephone lines (but not time slots)**, the data service and the voice service in different telephone lines have already been separated from each other and there is **no** need for the system of Feinberg to comprise a circuit to complete separating voice services from data services and rebuilding data. Thus it is **impossible** for Feinberg to disclose a time slot distribution circuit which is designed to complete separating voice time slots from Ethernet data time slots, and rebuilding data.

d) The elements of "a CPU interface circuit" and "the CPU interface circuit implements controlling on time slot distribution" are not found in Feinberg.

The device for realizing dynamic adjustment of data bandwidth in transmission equipment provided by claim 6 of the present invention comprises "a CPU interface circuit", and



"the CPU interface circuit implements controlling on time slot distribution". Referring to Feinberg, however, no **CPU** interface circuit is disclosed. Furthermore, Feinberg neither involves any concept of time slot distribution control, nor discloses any hardware that implements controlling on time slot distribution. Therefore Feinberg does not disclose "a CPU interface circuit", which "implements controlling on time slot distribution".

For at least the above reasons, Feinberg does not disclose or suggest each and every element of claim 6 of the present invention, and therefore claim 6 should be allowed over the cited reference. The applicants respectfully submit claim 6 conforms to the provisions of 35 U.S.C. 102(e).

Moreover, the technical scheme defined by claim 6 of the present invention not only possesses novelty relative to Feinberg, but also possesses inventiveness relative to Feinberg.

**Claims 7-8:**

Dependent claims 7-8 depend on independent claim 6, and are thus allowable for at least the same reasons as claim 6.

**Claim 9:**

Claim 9 provides a method for realizing dynamic adjustment of data bandwidth in transmission equipment, comprising:

informing a time slot distribution circuit by CPU of time slots to be occupied by a voice service as voice call begins when a current service is multiplexed to a direction of E1/T1 link;

releasing the time slots from data service by the time slot distribution circuit; and distributing to the voice service;

informing the time slot distribution circuit by the CPU of the time slot having been released by the voice service after voice call finishes; and

distributing the time slots to Ethernet data service by the time slot distribution circuit, whereby dynamic adjustment of Ethernet data service is implemented.

It can be seen that the claimed invention of independent claim 9 differs substantially from Feinberg, and at least the following elements provided by claim 9 of the present invention are not found in Feinberg:

a) The element of “a method for realizing dynamic adjustment of data bandwidth in transmission equipment” is not found in Feinberg.

As mentioned above in claim 1, Feinberg does **not** give any information about a method for realizing dynamic adjustment of data bandwidth in transmission equipment. Instead, the method disclosed by Feinberg is to add an access switch in the user side, which of course will affect the users' application. The method for realizing dynamic adjustment of data bandwidth in transmission equipment provided by claim 9 of the present invention, however, is applied in the transmission equipment. By the method provided by claim 9 of the present invention, there is not any change in the user side, and the user will not feel that there is any change in applications. Feinberg, however, makes no reference to such a method.

b) The element of “informing a time slot distribution circuit by CPU of time slots to be occupied by a voice service as voice call begins when a current service is multiplexed to a direction of E1/T1 link” is not found in Feinberg.

Firstly, as mentioned above, Feinberg does **not** give any information about time slot distribution circuit, so there is no time slot distribution circuit being informed “of time slots to be occupied by a voice service as voice call begins” in Feinberg. Actually since in Feinberg, the data service and the voice service occupy different telephone lines (but not time slots) and the telephone lines occupied by the data service can not be distributed to the voice service, there is no need for Feinberg to inform of time slots to be occupied by a voice service.

Additionally, Feinberg does **not** give any concept of what actions CPU takes as voice call begins.

Therefore it is **impossible** for Feinberg to disclose the element of “informing a time slot

distribution circuit by CPU of time slots to be occupied by a voice service as voice call begins when a current service is multiplexed to a direction of E1/T1 link" provided by claim 9 of the present invention.

c) The element of "releasing the time slots from data service by the time slot distribution circuit; and distributing to the voice service" is not found in Feinberg.

As mentioned above, in Feinberg, the data service and the voice service occupy different telephone lines (but not time slots), and the telephone lines occupied by the data service can not be distributed to the voice service, therefore it is **impossible** for Feinberg to release the time slots from data service, and distribute to the voice service. Additionally, as also mentioned above, Feinberg does **not** give any information about time slot distribution circuit. Therefore Feinberg does **not** disclose the element of "releasing the time slots from data service by the time slot distribution circuit; and distributing to the voice service" provided by claim 9 of the present invention.

d) The element of "informing the time slot distribution circuit by the CPU of the time slot having been released by the voice service after voice call finishes" is not found in Feinberg.

As mentioned above, Feinberg does **not** give any information about time slot distribution circuit. Additionally, Feinberg does **not** give any concept of what actions CPU takes after voice call finishes, so it is **impossible** for Feinberg to disclose "informing the time slot distribution circuit by the CPU of the time slot having been released by the voice service after voice call finishes".

e) The element of "distributing the time slots to Ethernet data service by the time slot distribution circuit" is not found in Feinberg.

As mentioned above, Feinberg neither gives any information about time slot distribution circuit, nor discloses any hardware for distributing the time slots to Ethernet data service. In Feinberg, the telephone lines occupied by the voice service can **not** be distributed to the data

service after voice call finishes. Therefore Feinberg does not disclose the element of "distributing the time slots to Ethernet data service by the time slot distribution circuit" provided by claim 9 of the present invention.

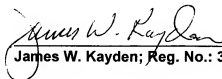
For at least the above reasons, Feinberg does not disclose or suggest each and every element of claim 9 of the present invention, and therefore claim 9 should be allowed over the cited reference. The applicants respectfully submit claim 9 conforms to the provisions of 35 U.S.C. 102(e).

Moreover, the technical scheme defined by claim 9 of the present invention not only possesses novelty relative to Feinberg, but also possesses inventiveness relative to Feinberg.

#### **CONCLUSION**

With the amendments presented herein, it is believed that all the claims remaining in the Application are in condition for allowance. Early and favorable action in this regarding is hereby respectfully requested. Should there be any minor informalities remaining, the Examiner is respectfully requested to call the undersigned attorney so that this case may be passed to issue at an early date.

Respectfully submitted,

  
James W. Kayden; Reg. No.: 31,532

**THOMAS, KAYDEN,  
HORSTEMEYER & RISLEY, L.L.P.**  
Suite 1500  
600 Galleria Parkway N.W.  
Atlanta, Georgia 30339  
(770) 933-9500